

Description

LIGHTING FIXTURE WITH NIGHT LIGHT

BACKGROUND OF INVENTION

[0001] This invention relates to an indoor lighting fixture equipped with a night light and a sensor. In particular, it relates to a lighting fixture that has a night light that is always on and a brighter safety light that comes on only when a sensor detects the presence of a person.

[0002] Buildings and indoor parking garages are required by law to have lights in the corridors and stairwells, both for security and for safety. While the UCB (Uniform Code for Buildings) requires these lights to be only one foot candle, the conventional practice is to use much brighter lights in order to reduce or avoid liability for inadequate lighting. The cost of electricity for these lights in a large building can be a significant expense.

SUMMARY OF INVENTION

[0003] The lighting fixture of this invention conserves energy and reduces the cost of lighting corridors and stairwells in

buildings such as office buildings, apartment buildings, hospitals, parking garages, and other facilities. The fixture has a night light that is continuously on, providing the minimum amount of light needed to comply with building regulations. The fixture also has a sensor that can detect the presence of a person. When a person is detected, a brighter safety light is turned on to provide ample light in the area. Once the person leaves, the safety light is turned off. Since the night light uses very little electricity and the safety light is usually on only very infrequently, the amount of electricity used for lighting corridors and stairwells in buildings is cut dramatically.

BRIEF DESCRIPTION OF DRAWINGS

- [0004] Figure 1 is an isometric view of a certain presently preferred embodiment of a lighting fixture according to this invention.
- [0005] Figure 2 is a plan view of the lighting fixture of Figure 1 with the lens removed.
- [0006] Figure 3 is a circuit diagram of the lighting fixture according to this invention, where two bulbs are used for the safety light.
- [0007] Figure 4 is an isometric view showing the lighting fixture of Figure 1 mounted in a corridor.

[0008] Figure 5 is an isometric view showing the lighting fixture of Figure 1 mounted in a stairwell.

DETAILED DESCRIPTION

[0009] In Figures 1 and 2, lighting fixture 1 has a casing 2 and a lens 3. Beneath lens 3 is a 32 watt fluorescent safety light 4, held by sockets 5, and a 5 watt compact fluorescent night light 6, held by socket 7. There is also a ballast 8 for for safety light 4 and a second ballast 9 for night light 6. At one end of fixture 1 is attached a sensor 10 that can detect the presence of a person in the area lit by safety light 4.

[0010] In Figure 3, a source of electrical power 11, typically 110VAC or 220VAC, supplies power continuously to night light 6. Sensor 10 is connected in series with two 15 watt fluorescent safety lights 12 and turns safety lights 12 on immediately when it detects a person and turns safety lights 12 off at a predetermined interval after the person is no longer detected. That interval can be set on sensor 10, by turning a knob (not shown) to the delay desired. The delay could be set, for example, to between about 30 seconds and about 30 minutes; a delay of about 1 to about 3 minutes is preferred.

[0011] The night light of this invention preferably provides about

1 to about 2 foot candles, which meets the UCB requirement without wasting energy. A bulb of about 3 to about 7 watts is preferred for the night light and a 5 watt energy efficient fluorescent bulb is particularly preferred.

[0012] Safety light 4 emits more light than night light 6, preferably about 3 to about 4 times as much light and preferably provides about 8 to about 12 foot candles. Safety light 4 may be a single bulb or several bulbs. The total power usage of safety light 4 for one or more bulbs may be, for example, about 20 to about 40 watts. If two bulbs are used, each may be about 10 to about 18 watts. Other types of lights besides fluorescent lights may also be used, such as incandescent lights, mercury vapor lights, and sodium vapor lights.

[0013] Sensor 10 may detect the presence of a person in a variety of different ways, such as by the emission of infrared radiation (heat), by the breaking of a beam of light, by radar, etc. Preferably, it detects the presence of a person by motion. A preferred motion-detecting sensor detects the presence of a person by sensing the difference between infrared energy from a human body in motion and the background space; that sensor is available from The Watt Stopper, Inc. Preferred sensors can detect the pres-

ence of a person equally well in any direction (360°) within the space that is being lighted.

[0014] Casing 2 is typically made of metal, but may be made of other materials, such as plastic, if desired. Lens 3 protects safety light 4 and night light 6 while transmitting as much light as possible. A variety of different types of lenses may be used; a clear prismatic acrylic lens is preferred. A locking lens system may be used to make it more difficult for vandals and criminals to break the lights.

[0015] The lighting fixtures intended primarily for use indoors, but could also be used outdoors. They are typically mounted on the ceiling in a corridor, as shown in Figure 4, or on the wall in a stairwell, as shown in Figure 5. In a corridor (Figure 4), a fixture 1 may be placed on the ceiling about every 16 feet and in a stairwell (Figure 5) a fixture 1 may be mounted on the wall at every landing. An emergency ballast (i.e., a battery) may be added to the fixture to provide power during a power outage, if desired. This technology can also be used to retrofit existing fixtures, if applicable.